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TECHNICAL SERVICE BULLETIN #147

(This bulletin supersedes 94TSI:13 rev B)

July 22, 1996

TO: All Qualified Service Organizations

FROM: Doug Catto

SUBJ: **Third Party Interfacing Guide**

This is a guide for interfacing North American Dräger products and external monitors manufactured by companies other than NAD. This guide can be used by service and sales personnel who need to know what is required to successfully set up the data transmission from the 3rd party monitors to NAD equipment. Each section is broken down by manufacturer (in alphabetical order) and the monitors that are currently hardware/software supported.

Colin

Monitors supported: BP-508

Data supported by this interface: Numeric data only

BP-508 prerequisites: None.

BP-508 Setup: The BP-508 monitor normally does not require any steps to configure the serial I/O port. Connect the NAD-BP-508 cable to the 9 pin "Data 1" connector on the rear of the BP-508 monitor.

North American Dräger Products prerequisites

Required interface cable part number: 4113241 Cable Asm-Colin

Narkomed 4: The NM4 must have software 1.40 or higher installed (the current software version is always recommended).

-Use port C or D

-Configure the port to: 4800 baud, parity even, 1 stop bit, 7 databits, and the device type to COLIN BP-508

Narkomed 2C: The NM2C must have the External Monitor Interface option plus software 1.20 or higher installed (the current software version is always recommended).

-Use port A or B

-Configure the port to: 4800 baud, parity even, 1 stop bit, 7 databits, and the protocol COLIN

Communication Hub: The ComHub must have software version 1.06 or higher installed (the current software version is always recommended).

-Use port A unless it is already occupied, then use port C, D, E, or F

-Configure the port using the SST (Service Software Tool) to: 4800 baud, parity even, 1 stop bit, 7 databits, and the protocol to COLIN BP-508 (note: for more detailed instructions on the use of the SST please refer to the instruction/service manual supplied with the ComHub).

Criticare

Monitors supported: POET II, POET IQ, and 1100

POET II and POET IQ

Data supported by this interface: Numeric data only

POET II and POET IQ prerequisites: None.

POET II Setup Connect the NAD-Criticare interface cable to the DB25 “Computer IF” port on the rear of the POET monitor.

The configuration steps for the POET II are as follows:

- Step#1 Press and hold the Alarms Set key on the front panel to gain access to the Setup screen
- Step#2 In the Setup screen use the Alarms Set key to move the highlighted cursor. Use the up and down arrow keys to change the parameters in the highlighted area.
- Step#3 Configure the subsequent parameters in the Setup screen as follows:
 - Port mode: ASCII print
 - Baud: 19200
 - Port Time: 1 second
- Step#4 To exit the Setup screen press the Waveforms, Digital Display, or Trends keys.

POET IQ Setup

The configuration steps for the POET IQ are as follows:

- Step#1 Press the Setup key on the front panel
- Step#2 In the Setup screen use the Move key to move the highlighted cursor. Use the up and down arrow keys to change the parameters in the highlighted area.
- Step#3 Configure the subsequent parameters in the Setup screen as follows:
 - Port mode: ASCII print
 - Baud: 19200
 - Port Time: 1 second
- Step#4 To exit the Setup screen press the Wave, Numeric, or Trend keys.

Note: If after setting up the serial port configuration parameters on the units there is still no transfer of data from the POET to the NAD device it may be necessary to cycle power to the units to establish initial communication.

North American Dräger Products prerequisites:

Required interface cable part number: 4112318-002 Cable Asm-Criticare

Narkomed 4: The NM4 must have software 1.25 or higher installed (the current software version is always recommended).

-Use port C or D

-Configure the port to: 19200 baud, parity none, 1 stop bit, 8 databits, and the device type to CRITICARE POET IQ

Narkomed 2C: The NM2C must have the External Monitor Interface option plus software 1.04 or higher installed (the current software version is always recommended).

-Use port A or B

-Configure the port to: 19200 baud, parity none, 1 stop bit, 8 databits, and the protocol POET

Communication Hub: The ComHub must have software version 1.04 or higher installed (the current software version is always recommended).

-Use port A unless it is already occupied, then use port C, D, E, or F

-Configure the port using the SST (Service Software Tool) to: 19200 baud, parity none, 1 stop bit, 8 databits, and the protocol to CRITICARE POET (note: for more detailed instructions on the use of the SST please refer to the instruction/service manual supplied with the ComHub).

Criticare 1100

Data supported by this interface: Numeric data only

1100 prerequisites: None.

1100 Setup Connect the NAD Criticare cable to the DB25 “Computer IF” port on the rear of the POET monitor.

The configuration steps for the 1100 are as follows:

- Step#1 Press the MONITOR SETUP key. The first screen of the monitor setup will appear.
- Step#2 Press the CONTINUE key 2 times to go to the 3rd screen of the monitor setup parameters.
- Step#3 Press the NEXT and PREVIOUS keys until the parameter to be changed is highlighted.
- Step#4 Press the up and down arrow softkeys until the desired setting for that parameter is displayed on the screen.

Set the following parameters as shown:

Serial Output Mode:	Standard
Baud Rate:	9600

Note: If after setting up the serial port configuration parameters on the units there is still no transfer of data from the 1100 to the NAD device it may be necessary to cycle power to the units to establish initial communication. If the problem still persists contact the North American Dräger Service Department.

North American Dräger Products prerequisites:

Required interface cable part number: 4110328-003 Cable Asm-Criticare 1100

Narkomed 4: The NM4 must have software 1.40 or higher installed (the current software version is always recommended).

-Use port C or D

-Configure the port to: 9600 baud, parity none, 1 stop bit, 8 databits, and the device type to CRITICARE 1100

Narkomed 2C: The NM2C must have the External Monitor Interface option plus software 1.20 or higher installed (the current software version is always recommended).

-Use port A or B

-Configure the port to: 9600 baud, parity none, 1 stop bit, 8 databits, and the protocol C1100

Communication Hub: The ComHub must have software version 2.01 or higher installed (the current software version is always recommended).

-Use port A unless it is already occupied, then use port C, D, E, or F.

-Configure the port using the SST (Service Software Tool) to: 9600 baud, parity none, 1 stop bit, 8 databits, and the protocol to CRITICARE 1100 (note: for more detailed instructions on the use of the SST please refer to the instruction/service manual supplied with the ComHub).

Critikon

Monitors supported: Dinamap

Data supported by this interface: Numeric data only

Dinamap prerequisites: None.

Dinamap Setup: The Dinamap monitor normally does not require any steps to configure the serial I/O port. Connect the NAD-Dinamap interface cable to the DB9 Serial Data port on the rear of the monitor.

North American Dräger Products prerequisites

Required interface cable part number: 4113142-002 Cable Asm-Critikon Dinamap

Narkomed 4: The NM4 must have software 1.40 or higher installed (the current software version is always recommended).

-Use port C or D

-Configure the port to: 600 baud, parity none, 1 stop bit, 8 databits, and the device type to CRITIKON DINAMAP

Narkomed 2C: The NM2C must have the External Monitor Interface option plus software 1.20 or higher installed (the current software version is always recommended).

-Use port A or B

-Configure the port to: 600 baud, parity none, 1 stop bit, 8 databits, and the protocol DNMAP

Communication Hub: The ComHub must have software version 2.01 or higher installed (the current software version is always recommended).

-Use port A unless it is already occupied, then use port C, D, E, or F

-Configure the port using the SST (Service Software Tool) to: 600 baud, parity none, 1 stop bit, 8 databits, and the protocol to CRITIKON DINAMAP (note: for more detailed instructions on the use of the SST please refer to the instruction/service manual supplied with the ComHub).

Datascope

Monitors supported: Multinex 4000 series, Passport, and Point of View

Multinex 4000 Series

Data supported by this interface: Numeric data only

Multinex prerequisites: None.

Multinex Setup: The Multinex monitor normally does not require any steps to configure the serial I/O port. Connect the NAD-Multinex interface cable to the DB25 "RS-232" port on the rear of the Multinex.

North American Dräger Products prerequisites:

Required interface cable part number: 4113142-Cable Asm-Datascope

Narkomed 4: The NM4 must have software 1.40 or higher installed (the current software version is always recommended).

-Use port C or D

-Configure the port to: 2400 baud, parity none, 1 stop bit, 8 databits, and the device type to DATASCOPE MULTINEX

Narkomed 2C: The NM2C must have the External Monitor Interface option plus software 1.20 or higher installed (the current software version is always recommended).

-Use port A or B

-Configure the port to: 2400 baud, parity none, 1 stop bit, 8 databits, and the protocol MULTX

Communication Hub: The ComHub must have software version 1.05 or higher installed (the current software version is always recommended).

-Use port A unless it is already occupied, then use port C, D, E, or F.

-Configure the port using the SST (Service Software Tool) to: 2400 baud, parity none, 1 stop bit, 8 databits, and the protocol to DATASCOPE MULTINEX (note: for more detailed instructions on the use of the SST please refer to the instruction/service manual supplied with the ComHub).

Passport and Point of View

Data supported by this interface: Numeric data only

Passport prerequisites: None.

Passport setup: Connect the NAD-Passport interface cable to connector J1 on the right side of the Passport monitor.

The configuration steps for the Passport are as follows:

Step#1 Turn the monitor system power to ON.

Step#2 When the message "Diagnostics in Progress" appears on the display, press and hold the FREEZE key.

Step#3 Configure the Serial Output Type parameter to DIAP.

Step#4 Press and hold the END key for 3 seconds to exit the setup screen and save the new parameters.

North American Dräger Products prerequisites

Required interface cable part number: 4113242-002 Cable Asm-Datascope Diap

Narkomed 4: The NM4 must have software 1.40 or higher installed (the current software version is always recommended).

-Use port C or D

-Configure the port to: 9600 baud, parity none, 1 stop bit, 8 databits, and the device type to DATASCOPE DIAP

Narkomed 2C: The NM2C must have the External Monitor Interface option plus software 1.20 or higher installed (the current software version is always recommended).

-Use port A or B

-Configure the port to: 9600 baud, parity none, 1 stop bit, 8 databits, and the protocol DIAP

Communication Hub: The ComHub must have software version 1.06 or higher installed (the current software version is always recommended).

-Use port A unless it is already occupied, then use port C, D, E, or F

-Configure the port using the SST (Service Software Tool) to: 9600 baud, parity none, 1 stop bit, 8 databits, and the protocol to DATASCOPE DIAP (note: for more detailed instructions on the use of the SST please refer to the instruction/service manual supplied with the ComHub).

Datex

Monitors supported: Datex AS/3, Capnomac II, Cardiocap II and Ultima,

AS/3

Data supported by this interface: Numeric data only

AS/3 prerequisites: None.

AS/3 Setup: The Datex monitor normally does not require any steps to configure the serial I/O port. Should you experience a lack of communication contact the NAD Service Department. The DB9 serial I/O port used to communicate with the NAD device is located above the much larger DB44 pin connector on the rear of the monitoring section of the AS/3 system on the UPI card.

North American Dräger Products prerequisites

Required interface cable part number: 4112477-Cable Asm-Datex AS/3 DB9/DB9x96

Narkomed 4: The NM4 must have software 1.22 or higher installed (the current software version is always recommended).

-Use port C or D

-Configure the port to: 19200 baud, parity even, 1 stop bit, 8 databits, and the device type to DATEX AS3

Narkomed 2C: The NM2C must have the External Monitor Interface option plus software 1.04 or higher installed (the current software version is always recommended).

-Use port A or B

-Configure the port to: 19200 baud, parity even, 1 stop bit, 8 databits, and the protocol DATEX

Communication Hub: The ComHub must have software version 1.03 or higher installed (the current software version is always recommended).

-Use port A unless it is already occupied, then use port C, D, E, or F

-Configure the port using the SST (Service Software Tool) to: 19200 baud, parity even, 1 stop bit, 8 databits, and the protocol to DATEX AS3 (note: for more detailed instructions on the use of the SST please refer to the instruction/service manual supplied with the ComHub).

Capnomac II

Data supported by this interface: Numeric data only

Capnomac II prerequisites: None.

Capnomac II Setup: The Datex monitor normally does not require any steps to configure the serial I/O port.

North American Dräger Products prerequisites

Required interface cable part number: 4113314-Cable Asm-Datex CAP

Narkomed 4: The NM4 must have software 1.40 or higher installed (the current software version is always recommended).

-Use port C or D

-Configure the port to: 1200 baud, parity none, 1 stop bit, 8 databits, and the device type to DATEX CARDCAP

Narkomed 2C: The NM2C must have the External Monitor Interface option plus software 1.20 or higher installed (the current software version is always recommended).

-Use port A or B

-Configure the port to: 1200 baud, parity none, 1 stop bit, 8 databits, and the protocol CARD

Communication Hub: The ComHub must have software version 1.07 or higher installed (the current software version is always recommended).

-Use port A unless it is already occupied, then use port C, D, E, or F

-Configure the port using the SST to: 1200 baud, parity none, 1 stop bit, 8 databits, and the protocol to DATEX CARDCAP (note: for more detailed instructions on the use of the SST please refer to the instruction/service manual supplied with the ComHub).

Cardicap II

Data supported by this interface: Numeric data only

Cardicap II prerequisites: None

Cardiocard Setup: The Datex monitor normally does not require any steps to configure the serial I/O port.

North American Dräger Products prerequisites

Required interface cable part number: 4113314-Cable Asm-Datex CAP

Narkomed 4: The NM4 must have software 1.40 or higher installed (the current software version is always recommended).

-Use port C or D

-Configure the port to: 1200 baud, parity none, 1 stop bit, 8 databits, and the device type to DATEX CARDCAP

Narkomed 2C: The NM2C must have the External Monitor Interface option plus software 1.20 or higher installed (the current software version is always recommended).

-Use port A or B

-Configure the port to: 1200 baud, parity none, 1 stop bit, 8 databits, and the protocol CARD

Communication Hub: The ComHub must have software version 1.07 or higher installed (the current software version is always recommended).

-Use port A unless it is already occupied, then use port C, D, E, or F

-Configure the port using the SST to: 1200 baud, parity none, 1 stop bit, 8 databits, and the protocol to DATEX CARDCAP (note: for more detailed instructions on the use of the SST please refer to the instruction/service manual supplied with the ComHub).

Ultima

Data supported by this interface: Numeric data only

Capnomac Ultima prerequisites: None.

Capnomac Ultima Setup: The Datex monitor normally does not require any steps to configure the serial I/O port.

North American Dräger Products prerequisites

Required interface cable part number: 4113314-Cable Asm-Datex CAP

Narkomed 4: The NM4 must have software 1.40 or higher installed (the current software version is always recommended).

-Use port C or D

-Configure the port to: 1200 baud, parity none, 1 stop bit, 8 databits, and the device type to DATEX CARDCAP

Narkomed 2C: The NM2C must have the External Monitor Interface option plus software 1.20 or higher installed (the current software version is always recommended).

-Use port A or B

-Configure the port to: 1200 baud, parity none, 1 stop bit, 8 databits, and the protocol CARD

Communication Hub: The ComHub must have software version 1.07 or higher installed (the current software version is always recommended).

-Use port A unless it is already occupied, then use port C, D, E, or F
-Configure the port using the SST to: 1200 baud, parity none, 1 stop bit, 8 databits, and the protocol to DATEX CARDCAP (note: for more detailed instructions on the use of the SST please refer to the instruction/service manual supplied with the ComHub).

Hewlett-Packard

Monitors supported: HP “Merlin” CMS

Data supported by the interface: Numeric data and ECG waveforms (except with ComHub)

CMS prerequisites: The CMS must have the HP computer interface card installed and it **must** be option J13. This card is a RS232/RS422 serial I/O PCB located in the rear of the unit behind the flip-down panel. It has two DB25 RS422/RS232 female ports on it. Either port can be used for the NAD interface. The card is marked with the numbers *M1085_66501* below the lower RS422/RS232 port. There is a EPROM on the PCB that dictates what option the card is (example J13). This IC must be marked *85003* for the NAD interface to work successfully.

HP MECIF Setup for the Hewlett-Packard Monitor

The required configuration of the HP monitor is quite detailed and the following steps must be performed:

- Step#1 Press Monitor Setup (on some monitors this key is Instrument Config)
- Step#2 Press More Choices softkey
- Step#3 Select and press Operating Modes softkey
- Step#4 Insert password 1245 using the softkeys
- Step#5 The Change Op Mode softkey should now be highlighted. Press the Change Op Mode softkey
- Step#6 Use the arrow hardkeys to proceed to Config
- Step#7 Press Confirm hardkey (note: the monitor will reset itself at this time)
- Step#8 Press Monitor Setup (or Instrument Config) hardkey
- Step#9 Select and press RS232 softkey
- Step#10 Activate Computer On for the corresponding port number (Port#1 or Port#2) on the option J13 HP computer IF card you will be connecting the NAD-HP interface cable to.
- Step#11 Baud rate for the corresponding port number should be 19200
- Step#12 Make certain that the corresponding port number TX/RX order is set to HI/LOW
- Step#13 Press Store Settings softkey if any changes were required any of the parameters
- Step#14 Press Confirm hardkey
- Step#15 Press Monitor Setup (or Instrument Config) hardkey
- Step#16 Press Operating Modes softkey
- Step#17 Insert password 1245 using the softkeys
- Step#18 The Change Op Mode softkey should now be highlighted. Press the Change Op Mode softkey
- Step#19 Use arrow hardkeys to proceed to Monitor
- Step#20 Press Confirm (note: monitor will again reset itself at this time)

North American Dräger Products prerequisites:

Required interface cable part number: 4112318-Cable Asm-HP MECIF DB9xDB25/96

Narkomed 4: The NM4 must have software version 1.21 or higher installed (the current software version is always recommended).

-Use port C or D

-Configure the port to: 19200 baud, parity none, 1 stop bit, 8 databits, and the device type to HP MECIF

Narkomed 2C: The NM2C must have the External Monitor Interface option plus software version 1.04 or higher installed (the current software version is always recommended).

-Use port A or B

-Configure the port to: 19200 baud, parity none, 1 stop bit, 8 databits, and the protocol MECIF

Communication Hub: The ComHub must have software version 1.03 or higher installed (the current software version is always recommended).

-Use port A

-Configure the port using the SST (Service Software Tool) to: 19200 baud, parity none, 1 stop bit, 8 databits, and the protocol to MECIF (note: for more detailed instructions on the use of the SST please refer to the instruction/service manual supplied with the ComHub).

Other notes about this interface:

Please take note of the following section if it seems as if some data is not being displayed or logged on the NAD device.

If some numeric values are being obtained from the HP CMS Merlin, but not all values, sometimes the Merlin is set up incorrectly

RESPIRATION RATE- The HP provides an Airway Respiration Rate (AWRR) and a respiration rate based on transthoracic impedance (RESP). The ability to translate these values were added to the NM2C version 1.10, NM4 version 1.25, and ComHub version 1.02 softwares.

TEMPERATURE- The HP can provide up to four sources of temperature data. Each source can have a different label (Tskin, Tcore, Tesorect, Tnaso, Tesop, Tart, Tven, etc.). It can also have a label based on its source number (T1, T2, T3, T4). The following is how the temperatures are translated:

<u>HP MECIF</u>	<u>NAD Vitalink</u>
T1 or Tskin	TEMP1
T2 or Tcore	TEMP2

If the HP temperature has the label Tnaso, it will not be translated.

PRESSURES: The HP can provide up to six sources of invasive pressure data. Each source can have a different label (ART, RAP, etc.). It can also have a label based on its source number (P1, P2, P3, P4, P5, P6). This is how the invasive pressures are translated:

<u>HP MECIF</u>	<u>NAD Vitalink</u>
ART	Arterial
ABPP2	Arterial
Ao	RV
RA	RA
LAP	LAP
PAP	PA

If the HP pressure has a label P1 it will not be translated. If more than one HP source has a label ART, only the value from the lowest source will be translated.

It is possible for the HP CMS Merlin to obtain data from an external HP Gas Measuring System (SNOOPY) that can then pass this data over MECIF to an NAD device. To do this, the HP has to have a VueLink

Module. The VueLink Module plugs into the HP CMS and is connected via an RS232 cable to an external monitor. The ability to translate HP Gas System Measuring System (SNOOPY) data was added to the NM2C version 1.10, NM4 version 1.25, and Communication Hub version 1.03 software.

To setup communications:

- 1) Setup communications between the HP CMS and the NAD device.
- 2) Connect the external monitor to the HP CMS VueLink module using the cable provided by HP.
The VueLink module used depends on the type of external monitor used
- 3) Configure the HP CMS VueLink Module. The module can be setup to obtain certain data from the external monitor. For example the Gas Measuring System can provide any combination of six numeric values, etCO₂, inCO₂, ARR, etN₂O, inN₂O, SpO₂, PULSE, etO₂, FIO₂. etAgt (etISO, etENF, etHAL, etDES, etSEV), inAGT (inISO, inENF, inHAL, inDES, inSEV).
If the value is also provided by another module on the HP CMS, the value from the CMS will be used, not the value from the VueLink Module.

Only the numerics that are selected and displayed on the HP CMS will be transferred via MECIF. So even though the gas monitor may be able to provide CO₂ values, the data may not be selected on the HP CMS and therefore will not be sent to the NAD device.

To setup the CMS for the desired data:

- 1) Press the VueLink button on the VueLink Module
- 2) Press the Select Data key
- 3) Use the arrow keys to scroll to the number (Num1-Num6) to set.
- 4) Press the Select Signal key. Use the arrow keys to select the desired signal.

Marquette

Monitors supported: Marquette Tramscope and Eagle

Data supported by this interface: Numeric data only

Marquette prerequisites: None

Marquette Setup: The Marquette Tramscope and Eagle monitors normally do not require any steps to configure the serial I/O port.

North American Dräger Products prerequisites:

Required interface cable part number: 4112442 Cable Asm-Marquette or 4113117 Cable Asm -Marquette Tramscope

There are two interfacing options to the Marquette Tramscope.

1. The 4113117 cable (DB9 x DB9) can be used if there is an open DB9 *async comm* port on the rear of Tramscope. In this case the cable will interface directly to the Marquette without the need for the Marquette Hub.
2. If all of the *async comm* ports are utilized on the rear Tramscope then the 4112442 cable (DB9 X DB25) used. In this case the Marquette **must** have the Marquette communication Hub (not to be

confused with the NAD ComHub) that interfaces between the Tramrack and the Tramscope. This communication hub has four DB9 serial ports on it that are marked 1, 2, 3, 4 plus a DB25 serial port marked *async comm*. It is this DB25 RS422 *async* serial I/O port that is used for the NAD interface cable connection.

Interfacing to the Marquette Eagle requires the use of the 4113117 cable which gets connected to an open *async comm* port on the rear or the monitor.

Narkomed 4: The NM4 must have software 1.22 or higher installed [current software version is always recommended (software ver $\geq$ 1.30 required to support Marquette gas analysis data)].

- Use port A or B

- Configure the port to 9600 baud, parity none, 1 stop bit, 8 databits, and the device type to TRAM NET

Narkomed 2C: The NM2C must have the External Monitor Interface option plus software version 1.04 or higher installed (software ver $\geq$ 1.11 required to support Marquette gas analysis data)].

- Use port A or B. The NM2C also requires the use of the RS422/RS232 converter kit (part number 4112806-001) in conjunction with the NAD-Marquette interface cable (4113117 or 4112442) to communicate with the Tramscope and Eagle

- Configure the port to 9600 baud, parity none, 1 stop bit, 8 databits, and the protocol MARQ

Communication Hub: The ComHub must have software version 1.03 or higher installed (the current software version is always recommended).

- Use port A only. Port A hardware configured for RS422 levels by moving the jumper from JP2 pins 1 and 2 to JP2 pins 2 and 3 on the processor PCB.

- Configure the port using the SST (Service Software Tool) to: 9600 baud, parity none, 1 stop bit, 8 databits, and the protocol to TRAM NET (note: for more detailed instructions on the use of the SST and the hardware jumper change please refer to the instruction/service manual supplied with the ComHub).

Nellcor

Monitors supported: N-1000 and N2500

Data supported by this interface: Numeric data only

N-1000 and N-2500 prerequisites: None.

N-1000 and N-2500 Setup: The Nellcor monitors normally do not require any steps to configure the serial I/O port. Connect the NAD-Nellcor interface cable to the DB9 Serial Data port on the rear of the monitor

North American Dräger Products prerequisites

Required interface cable part number: 4113503 Cable Asm-Nellcor

Narkomed 4: The NM4 must have software 1.40 or higher installed (the current software version is always recommended).

- Use port C or D

- Configure the port to: 9600 baud, parity none, 1 stop bit, 8 databits, and the device type to NELLCOR N-1000

Narkomed 2C: The NM2C must have the External Monitor Interface option plus software 1.20 or higher installed (the current software version is always recommended).

-Use port A or B

-Configure the port to: 9600 baud, parity none, 1 stop bit, 8 databits, and the protocol NELL

Communication Hub: The ComHub must have software version 2.01 or higher installed (the current software version is always recommended).

-Use port A unless it is already occupied, then use port C, D, E, or F

-Configure the port using the SST (Service Software Tool) to: 9600 baud, parity none, 1 stop bit, 8 databits, and the protocol to NELLCOR N-1000 (note: for more detailed instructions on the use of the SST please refer to the instruction/service manual supplied with the ComHub).

Ohmeda

Monitors supported: RASCAL and RGM

RASCAL

Data supported by this interface: Numeric data only

RASCAL prerequisites: None.

RASCAL Setup: The RASCAL monitor normally does not require any steps to configure the serial I/O port. Connect the NAD-RASCAL interface cable to the DB25 “RS-232” port on the rear of the RASCAL monitor.

North American Dräger Products prerequisites

Required interface cable part number: 4112318-003 Cable Asm-Ohmeda RASCAL

Narkomed 4: The NM4 must have software 1.40 or higher installed (the current software version is always recommended).

-Use port C or D

-Configure the port to: 9600 baud, parity none, 1 stop bit, 8 databits, and the device type to OHMEDA RASCAL

Narkomed 2C: The NM2C must have the External Monitor Interface option plus software 1.20 or higher installed (the current software version is always recommended).

-Use port A or B

-Configure the port to: 9600 baud, parity none, 1 stop bit, 8 databits, and the protocol RASCAL

Communication Hub: The ComHub must have software version 2.01 or higher installed (the current software version is always recommended).

-Use port A unless it is already occupied, then use port C, D, E, or F

-Configure the port using the SST to: 9600 baud, parity none, 1 stop bit, 8 databits, and the protocol to OHMEDA RASCAL (note: for more detailed instructions on the use of the SST please refer to the instruction/service manual supplied with the ComHub).

RGM

Data supported by this interface: Numeric data only

RGM prerequisites: None.

RGM Setup: Connect the NAD-RGM interface cable to the DB9 “RS-232” port on the rear of the RGM monitor. The configuration steps for the RGM are as follows:

- Step#1 Select MENU from the display screen.
- Step#2 Select SETUP from the menu. The setup screen appears.
- Step#3 Press the NEXT PAGE softkey.
- Step#4 On the second setup screen page press the RS-232 DEVICE softkey.
- Step#5 Set the RS-232 DEVICE to 9600 NONE.
- Step#6 Press the EXIT key.

North American Dräger Products prerequisites

Required interface cable part number: 4113566 Cable Asm-Ohmeda RGM

Narkomed 4: The NM4 must have software 1.40 or higher installed (the current software version is always recommended).

-Use port C or D

-Configure the port to: 9600 baud, parity none, 1 stop bit, 8 databits, and the device type to OHMEDA RGM

Narkomed 2C: The NM2C must have the External Monitor Interface option plus software 1.20 or higher installed (the current software version is always recommended).

-Use port A or B

-Configure the port to: 9600 baud, parity none, 1 stop bit, 8 databits, and the protocol RGM

Communication Hub: The ComHub must have software version 2.01 or higher installed (the current software version is always recommended).

-Use port A unless it is already occupied, then use port C, D, E, or F

-Configure the port using the SST (Service Software Tool) to: 9600 baud, parity none, 1 stop bit, 8 databits, and the protocol to OHMEDA RGM (note: for more detailed instructions on the use of the SST please refer to the instruction/service manual supplied with the ComHub).

Puritan-Bennett

Monitors supported: BP240

Data supported by this interface: Numeric data only

PB240 prerequisites: None.

PB240 Setup: The PB240 monitor normally does not require any steps to configure the serial I/O port. Connect the NAD-Puritan-Bennett interface cable to “Port 2” on the rear of the monitor.

North American Dräger Products prerequisites

Required interface cable part number: 4113142-001 Cable Asm-Puritan Bennett

Narkomed 4: The NM4 must have software 1.40 or higher installed (the current software version is always recommended).

-Use port C or D

-Configure the port to: 1200 baud, parity none, 1 stop bit, 8 databits, and the device type to PURITAN BENNET

Narkomed 2C: The NM2C must have the External Monitor Interface option plus software 1.20 or higher installed (the current software version is always recommended).

-Use port A or B

-Configure the port to: 1200 baud, parity none, 1 stop bit, 8 databits, and the protocol PURBN

Communication Hub: The ComHub must have software version 1.06 or higher installed (the current software version is always recommended).

-Use port A unless it is already occupied, then use port C, D, E, or F

-Configure the port using the SST (Service Software Tool) to: 1200 baud, parity none, 1 stop bit, 8 databits, and the protocol to PURITAN BENNET (note: for more detailed instructions on the use of the SST please refer to the instruction/service manual supplied with the ComHub).

Siemens

Monitors supported: Sirecust

Data supported by this interface: Numeric data only

Sirecust prerequisites: None.

Sirecust Setup: The Sirecust monitor normally does not require any steps to configure the serial I/O port. Connect the NAD-Sirecust interface cable to port “X8” on the rear of the monitor.

North American Dräger Products prerequisites

Required interface cable part number: 4113242-001 Cable Asm-Siemens

Narkomed 4: The NM4 must have software 1.40 or higher installed (the current software version is always recommended).

-Use port C or D

-Configure the port to: 4800 baud, parity even, 1 stop bit, 8 databits, and the device type to SIEMENS SIRECUST

Narkomed 2C: The NM2C must have the External Monitor Interface option plus software 1.20 or higher installed (the current software version is always recommended).

-Use port A or B

-Configure the port to: 4800 baud, parity even, 1 stop bit, 8 databits, and the protocol SRCT

Communication Hub: The ComHub must have software version 1.06 or higher installed (the current software version is always recommended).

-Use port A unless it is already occupied, then use port C, D, E, or F

-Configure the port using the SST (Service Software Tool) to: 4800 baud, parity even, 1 stop bit, 8 databits, and the protocol to SIEMENS SIRECUST (note: for more detailed instructions on the use of the SST please refer to the instruction/service manual supplied with the ComHub).

Spacelabs

Monitors supported: Spacelabs PC1, Spacelabs PC2, Spacelabs PC Express, and UCW

PC1, PC2, and PC Express

Data supported by this interface: Numeric data only

PC1, PC2, PC Express prerequisites: The Spacelabs PC Series monitors must have the Data Logger software option enabled in order to communicate with NAD devices. This option, if not enabled (see step number 5 of the setup instructions to determine if the option is enabled), activated by a Spacelabs representative.

PC1, PC2, and PC Express Setup

The required configuration of the Spacelabs Monitors is quite detailed and the following steps performed:

- Step#1 Press Monitor Setup hardkey
- Step#2 Along the bottom of the display four or five softkeys will appear. To the right of the fourth or fifth displayed key is/are one or two “hidden” blank key(s). Press the sixth hidden key
- Step#3 If the previous step is performed correctly now there will be a row of numbered softkeys keys along the bottom of the display. Using the numbered softkeys insert the password 2468
- Step#4 Select the Serial Ports softkey (note: depending on the type of monitor this key may not be displayed on the first screen. Press More Choices softkey to get to the second screen in this menu and now select the Serial Ports softkey)
- Step#5 The ports will be labeled by the port connector number on the back of the monitor. Push the numbered port softkeys to select the correct Data Logger port on the rear of the monitor that the DB25 end of the NAD-Spacelabs interface cable will be connected to. These ports are usually J8 or J13 for the PC1 and PC2 models and port J5 for the PC Express. The selected port should also have the Data Logger softkey displayed when selected (note: if the Data Logger selection does not appear on any of the port selections this means the Data Logger protocol is not enabled for the unit)
- Step#6 Press Data Logger softkey which will cause two additional softkeys to appear on the right of the Data Logger softkey
- Step#7 Press Data Logger Baud Rate softkey and select 9600 baud
- Step#8 Press Previous Menu hardkey
- Step#9 Press Data Logger Sample Rate softkey and set to 5 seconds
- Step#10 Press Previous Menu hardkey
- Step#11 Cycle power to the monitor to save the configuration settings

North American Dräger Products prerequisites

Required interface cable part number: 4112349-Cable Asm-Spacelabs

Narkomed 4: The NM4 must have software 1.24 or higher installed (the current software version is always recommended).

-Use port C or D

-Configure the port to: 9600 baud, parity none, 1 stop bit, 8 databits, and the device type to SPACELAB LOGGER

Narkomed 2C: The NM2C must have the External Monitor Interface option plus software 1.04 or higher installed (the current software version is always recommended).

-Use port A or B

-Configure the port to: 9600 baud, parity none, 1 stop bit, 8 databits, and the protocol S LABS.

Communication Hub: The ComHub must have software version 1.03 or higher installed (the current software version is always recommended).

-Use port A unless it is already occupied, then use port C, D, E, or F

-Configure the port using the SST (Service Software Tool) to: 9600 baud, parity none, 1 stop bit, 8 databits, and the protocol to SPACELAB LOGGER (note: for more detailed instructions on the use of the SST please refer to the instruction/service manual supplied with the ComHub).

UCW

Data supported by this interface: Numeric data only

UCW prerequisites: The Spacelabs UCW monitor must have the Data Logger software option enabled in order to communicate with NAD devices. This option, if not enabled (see step number 2 of the setup instructions to determine if the option is enabled), it must be activated by a Spacelabs representative .

UCW Setup: Connect the NAD-UCW interface cable to the DB9 port (usually marked J8) on UCW CRT section.

The required configuration of the Spacelabs UCW is quite detailed and the following steps performed:

- Step#1 On the main monitoring screen press the “Special Functions” icon
- Step#2 Press the “Data Logger” softkey and set “Patient Data Logger” to ON
- Step#3 Press the “Setup” softkey
 - Set Alarm Logging to OFF
 - Set Checksums to OFF
 - Set Sample Rate to 5 seconds
- Step#4 Go back to the main monitoring screen
- Step#5 Press “Monitor Setup” icon
- Step#6 Press “Privileged Access” softkey
 - Enter Username: BIOMED
 - Enter Password: BIOMED (BIOMED is the factory default password. If this password does not work it has been changed and the organization performing the service on the monitor must be contacted to gain access).
- Step#7 Press “Serial Port Config” softkey
- Step#8 Press “Settings” softkey. Set the parameters as follows:
 - Data: 8
 - Parity: N
 - Stop: 1
 - Echo: Full
 - CR/LF: None
 - XON/XOFF: Enabled
 - Baud: 9600
- Step#9 Go back to the main monitoring screen.

North American Dräger Products prerequisites

Required interface cable part number: 4110328-002 Cable Asm-Spacelabs UCW

Narkomed 4: The NM4 must have software 1.24 or higher installed (the current software version is always recommended).

- Use port C or D

- Configure the port to: 9600 baud, parity none, 1 stop bit, 8 databits, and the device type to SPACELAB

Narkomed 2C: The NM2C must have the External Monitor Interface option plus software 1.04 or higher installed (the current software version is always recommended).

- Use port A or B

- Configure the port to: 9600 baud, parity none, 1 stop bit, 8 databits, and the protocol S LABS

Communication Hub: The ComHub must have software version 1.03 or higher installed (the current software version is always recommended).

- Use port A unless it is already occupied, then use port C, D, E, or F.

- Configure the port using the SST (Service Software Tool) to: 9600 baud, parity none, 1 stop bit, 8 databits, and the protocol to SPACELAB LOGGER (note: for more detailed instructions on the use of the SST please refer to the instruction/service manual supplied with the ComHub).